SUPPORT FOR THE AMENDMENTS

Claims 1, 3, 4, 6, 8, and 9 have been amended.

Claims 10-51 have been added.

Support for the amendment of Claims 1, 3, 4, 6, 8, and 9, as well as new Claims 10-21, is provided by original Claims 1-9 and page 11, line 8 to page 17 of the specification. New Claims 22-36 are supported by original Claims 1 and 4-6 and page 11, line 8 to page 17 of the specification. New Claims 37-51 are supported by original Claims 1, 4, 5, and 7 and page 11, line 8 to page 17 of the specification.

No new matter is believed to be entered by the present amendments.

REMARKS

Claims 1-51 are pending in the present application.

The rejection of Claim 2 under 35 U.S.C. §112, second paragraph, is respectfully traversed.

In the Office Action, the Examiner alleges that it is unclear what "a functional equivalent gene is considered to be". Applicants disagree and submit that based on the plain language of Claim 2 and the specification as filed the meaning of this phrase is clear.

Applicants wish to remind the Examiner that: "Applicants are their own lexicographer" (MPEP §2173.01). MPEP §2173.01 also states that Applicants "can define in the claims what they regard as their invention essentially in whatever terms they choose so long as the terms are not used in ways that are contrary to accepted meanings in the art." Further, definiteness of claim language must be analyzed, not in a vacuum, but in light of:

(A) The content of the particular application disclosure;

(B) The teachings of the prior art; and

(C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made (MPEP §2173.02).

To this end, Applicants refer the Examiner to the plain language of Claim 2, which states, in part, "wherein the gene participating in membrane permeation of maltose is a *Bacillus subtilis* gene *glvR or glvC* or a gene functionally equivalent to the gene." It is clear from this language that the "gene functionally equivalent to the gene" refers to a gene that encodes a functional equivalent of the *Bacillus subtilis* gene *glvR or glvC*. In this regard, the following sections of the specification are specifically referenced: page 2, lines 11-17, page 3, lines 8-20, page 4, lines 5-25, page 5, line5 to page 6, line 22, and page 15, lines 5-13. Each

of these sections further clarifies the scope and meaning of the objected to phrase. Moreover, Applicants refer the Examiner to Table 1 on page 5 of the specification (below), which unequivocally provides the function to which the gene equivalent must encode a corresponding protein to match:

Table 1

Name of the gene	Gene ID	Functions or other information of the gene
glvC	BG11848	PTS maltose-specific enzyme IICB
glvR	BG11847	Positive regulator for *glvARC* operon

In view of the foregoing, Applicants submit that the claims are clear and unambiguous. As such, withdrawal of this ground of rejection is requested.

The rejection of Claims 1-3 under 35 U.S.C. §102(b) over Yamamoto et al is obviated by amendment.

The Examiner alleges that Yamamoto et al disclose a *B.subtilis* in which *glvR* has been disrupted and transformed to express *glvR-LacZ* transcriptional fusion protein (citing Fig. 6, page 5117, right column, and the Table on page 5111). The Examiner also alleges that Yamamoto et al disclose *B.subtilis* in which the *glvR* or *glvC* gene has been disrupted and transformed to express kanamycin (citing page 5114, paragraph 1).

Applicants disagree with these allegations. Specifically, in contrast to the Examiner's allegations, Yamamoto et al do not disclose transforming a *B.subtilis glvC* or *glvR* gene-disruption mutant with a plasmid encoding any heterologous protein including kanamycin (see, for example, the description to Figure 6: "β-galactosidase activity of the glvR-lacZ transcription fusion strain (GLVR-PSP)... A map of the glv operon of GLVR-PSP is shown

at the top"). On the contrary, Yamamoto et al merely disclose making *glvC* and/or *glvR* gene-disruption mutants by homologous recombination by which LacZ genes or kan^r genes are also incorporated into the chromosomal DNA. Further, the LacZ genes or kan^r genes are only used as a marker, which is not the same as expression of a heterologous protein as in the presently claimed invention.

Nonetheless, to expedite examination only, Applicants have amended Claim 1 to define the heterologous protein as being "selected from the group consisting of an oxidoreductase, a transferase, a lyase, an isomerase, a ligase/synthetase and a hydrolase, wherein said hydrolase is selected from the group consisting of a cellulase, an α-amylase, and a protease". Yamamoto et al do not disclose or suggest any embodiments with the scope of the presently claimed invention.

Withdrawal of this ground of rejection is requested.

The objection to Claims 4-9 under 37 C.F.R. §1.75(c) as being improperly multiply dependent is obviated by amendment. Applicants have amended the claims to remove all multiple dependencies. As such, this ground of objection should be withdrawn. Acknowledgement that this ground of objection has been withdrawn is requested.

The objection to the disclosure based on the lack of priority information on page 1 and the objection under 37 C.F.R. §1.72(b) are obviated by amendment. Applicants have amended the specification to include the priority information and have submitted an Abstract in compliance with 37 C.F.R. §1.72(b). Withdrawal of these grounds of objection are requested.

Applicants submit that the present application is now in condition for allowance.

Early notification of such action is earnestly solicited.

Respectfully submitted,

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